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corrected PG4939A sequence listing.txt

SEQUENCE LISTING

EPO - DG 1

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(63)

<110> Ellis, Jon
Ashman, Claire

<120> Vaccine

<130> PG4939A

<140> PCT/GB03/003721

<141> 2003-08-28

<160> 68

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 112

<212> PRT

<213> Homo Sapiens

<400> 1

Gly	Pro	Val	Pro	Pro	Ser	Thr	Ala	Leu	Arg	Glu	Leu	Ile	Glu	Glu	Leu
1															15
									10						
Val	Asn	Ile	Thr	Gln	Asn	Gln	Lys	Ala	Pro	Leu	Cys	Asn	Gly	Ser	Met
															30
									25						
Val	Trp	Ser	Ile	Asn	Leu	Thr	Ala	Gly	Met	Tyr	Cys	Ala	Ala	Leu	Glu
															45
									35	40					
Ser	Leu	Ile	Asn	Val	Ser	Gly	Cys	Ser	Ala	Ile	Glu	Lys	Thr	Gln	Arg
									50	55		60			
Met	Leu	Ser	Gly	Phe	Cys	Pro	His	Lys	Val	Ser	Ala	Gly	Gln	Phe	Ser
									65	70	75				80
Ser	Leu	His	Val	Arg	Asp	Thr	Lys	Ile	Glu	Val	Ala	Gln	Phe	Val	Lys
									85	90		95			
Asp	Leu	Leu	Leu	His	Lys	Lys	Leu	Phe	Arg	Glu	Gly	Arg	Phe	Asn	
									100	105		110			

<210> 2

<211> 111

<212> PRT

<213> Mus Musculus

<400> 2

Gly	Pro	Val	Pro	Arg	Ser	Val	Ser	Leu	Pro	Leu	Thr	Leu	Lys	Glu	Leu
1															15
Ile	Glu	Glu	Leu	Ser	Asn	Ile	Thr	Gln	Asp	Gln	Thr	Pro	Leu	Cys	Asn
															30
									20	25					
Gly	Ser	Met	Val	Trp	Ser	Val	Asp	Leu	Ala	Ala	Gly	Gly	Phe	Cys	Val
									35	40		45			

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Ala Leu Asp Ser Leu Thr Asn Ile Ser Asn Cys Asn Ala Ile Tyr Arg
 50 55 60
 Thr Gln Arg Ile Leu His Gly Leu Cys Asn Arg Lys Ala Pro Thr Thr
 65 70 75 80
 Val Ser Ser Leu Pro Asp Thr Lys Ile Glu Val Ala His Phe Ile Thr
 85 90 95
 Lys Leu Leu Ser Tyr Thr Lys Gln Leu Phe Arg His Gly Pro Phe
 100 105 110

<210> 3
 <211> 111
 <212> PRT
 <213> Sus scrofa

<400> 3
 Gly Pro Val Pro Pro His Ser Thr Ala Leu Lys Glu Leu Ile Glu Glu
 1 5 10 15
 Leu Val Asn Ile Thr Gln Asn Gln Lys Thr Pro Leu Cys Asn Gly Ser
 20 25 30
 Met Val Trp Ser Val Asn Leu Thr Thr Ser Met Gln Tyr Cys Ala Ala
 35 40 45
 Leu Glu Ser Leu Ile Asn Ile Ser Asp Cys Ser Ala Ile Gln Lys Thr
 50 55 60
 Gln Arg Met Leu Ser Ala Leu Cys Ser His Lys Pro Pro Ser Glu Gln
 65 70 75 80
 Val Pro Gly Lys His Ile Arg Asp Thr Lys Ile Glu Val Ala Gln Phe
 85 90 95
 Val Lys Asp Leu Leu Lys His Leu Arg Met Ile Phe Arg His Gly
 100 105 110

<210> 4
 <211> 112
 <212> PRT
 <213> Bos taurus

<400> 4
 Ser Pro Val Pro Ser Ala Thr Ala Leu Lys Glu Leu Ile Glu Glu Leu
 1 5 10 15
 Val Asn Ile Thr Gln Asn Gln Lys Val Pro Leu Cys Asn Gly Ser Met
 20 25 30
 Val Trp Ser Leu Asn Leu Thr Ser Ser Met Tyr Cys Ala Ala Leu Asp
 35 40 45
 Ser Leu Ile Ser Ile Ser Asn Cys Ser Val Ile Gln Arg Thr Lys Lys
 50 55 60
 Met Leu Asn Ala Leu Cys Pro His Lys Pro Ser Ala Lys Gln Val Ser
 65 70 75 80
 Ser Glu Tyr Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Leu Lys
 85 90 95
 Asp Leu Leu Arg His Ser Arg Ile Val Phe Arg Asn Glu Arg Phe Asn
 100 105 110

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<210> 5
<211> 111
<212> PRT
<213> Canis familiaris

<400> 5
Ser Pro Val Thr Pro Ser Pro Thr Leu Lys Glu Leu Ile Glu Glu Leu
1 5 10 15
Val Asn Ile Thr Gln Asn Gln Ala Ser Leu Cys Asn Gly Ser Met Val
20 25 30
Trp Ser Val Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Glu Ser
35 40 45
Leu Ile Asn Val Ser Asp Cys Ser Ala Ile Gln Arg Thr Gln Arg Met
50 55 60
Leu Lys Ala Leu Cys Ser Gln Lys Pro Ala Ala Gly Gln Ile Ser Ser
65 70 75 80
Glu Arg Ser Arg Asp Thr Lys Ile Glu Val Ile Gln Leu Val Lys Asn
85 90 95
Leu Leu Thr Tyr Val Arg Gly Val Tyr Arg His Gly Asn Phe Arg
100 105 110

<210> 6
<211> 111
<212> PRT
<213> Rattus

<400> 6
Gly Pro Val Arg Arg Ser Thr Ser Pro Pro Val Ala Leu Arg Glu Leu
1 5 10 15
Ile Glu Glu Leu Ser Asn Ile Thr Gln Asp Gln Lys Thr Ser Leu Cys
20 25 30
Asn Ser Ser Met Val Trp Ser Val Asp Leu Thr Ala Gly Gly Phe Cys
35 40 45
Ala Ala Leu Glu Ser Leu Thr Asn Ile Ser Ser Cys Asn Ala Ile His
50 55 60
Arg Thr Gln Arg Ile Leu Asn Gly Leu Cys Asn Gln Lys Ala Ser Asp
65 70 75 80
Val Ala Ser Ser Pro Pro Asp Thr Lys Ile Glu Val Ala Gln Phe Ile
85 90 95
Ser Lys Leu Leu Asn Tyr Ser Lys Gln Leu Phe Arg Tyr Gly His
100 105 110

<210> 7
<211> 111
<212> PRT
<213> Cynomolgus

<400> 7

corrected PG4939A sequence listing.txt

Ser	Pro	Val	Pro	Pro	Ser	Thr	Ala	Leu	Lys	Glu	Leu	Ile	Glu	Glu	Leu
1				5					10				15		
Val	Asn	Ile	Thr	Gln	Asn	Gln	Lys	Ala	Pro	Leu	Cys	Asn	Gly	Ser	Met
				20					25				30		
Val	Trp	Ser	Ile	Asn	Leu	Thr	Ala	Gly	Val	Tyr	Cys	Ala	Ala	Leu	Glu
					35			40			45				
Ser	Leu	Ile	Asn	Val	Ser	Gly	Cys	Ser	Ala	Ile	Glu	Lys	Thr	Gln	Arg
					50		55				60				
Met	Leu	Asn	Gly	Phe	Cys	Pro	His	Lys	Val	Ser	Ala	Gly	Gln	Phe	Ser
65					70				75				80		
Ser	Leu	Arg	Val	Arg	Asp	Thr	Lys	Ile	Glu	Val	Ala	Gln	Phe	Val	Lys
					85			90				95			
Asp	Leu	Leu	His	Leu	Lys	Lys	Leu	Phe	Arg	Glu	Gly	Gln	Phe	Asn	
					100			105				110			

<210> 8

<211> 112

<212> PRT

<213> Rhesus

<400> 8

Ser	Pro	Val	Pro	Arg	Ser	Thr	Ala	Leu	Lys	Glu	Leu	Ile	Glu	Glu	Leu
1				5					10				15		
Val	Asn	Ile	Thr	Gln	Asn	Gln	Lys	Ala	Pro	Leu	Cys	Asn	Gly	Ser	Met
				20					25				30		
Val	Trp	Ser	Ile	Asn	Leu	Thr	Ala	Gly	Val	Tyr	Cys	Ala	Ala	Leu	Glu
					35		40			45					
Ser	Leu	Ile	Asn	Val	Ser	Gly	Cys	Ser	Ala	Ile	Glu	Lys	Thr	Gln	Arg
					50		55				60				
Met	Leu	Asn	Gly	Phe	Cys	Pro	His	Lys	Val	Ser	Ala	Gly	Gln	Phe	Ser
65					70				75				80		
Ser	Leu	Arg	Val	Arg	Asp	Thr	Lys	Ile	Glu	Val	Ala	Gln	Phe	Val	Lys
					85			90				95			
Asp	Leu	Leu	Val	His	Leu	Lys	Lys	Leu	Phe	Arg	Glu	Gly	Arg	Phe	Asn
					100			105				110			

<210> 9

<211> 112

<212> PRT

<213> marmoset

<400> 9

Gly	Pro	Val	Pro	Pro	Tyr	Thr	Ala	Leu	Lys	Glu	Leu	Ile	Glu	Glu	Leu
1				5					10				15		
Val	Asn	Ile	Thr	Gln	Asn	Gln	Lys	Ala	Pro	Leu	Cys	Asn	Gly	Ser	Met
				20					25				30		
Val	Trp	Ser	Ile	Asn	Met	Thr	Ala	Gly	Val	Tyr	Cys	Ala	Ala	Leu	Glu
					35		40			45					
Ser	Leu	Ile	Asn	Val	Ser	Gly	Cys	Ser	Ala	Ile	Glu	Lys	Thr	Gln	Arg
					50		55				60				

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Met Leu Ser Gly Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
65 70 75 80
Ser Leu Leu Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Lys
85 90 95
Asp Leu Leu Arg His Leu Arg Lys Leu Phe His Gln Gly Thr Phe Asn
100 105 110

<210> 10

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Human Immunogen

<400> 10

Gly Pro Val Pro Pro Ser Ser Ala Leu Lys Glu Leu Ile Glu Glu Leu
1 5 10 15 ..
Ala Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
20 25 30
Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Asp
35 40 45
Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Arg Thr Gln Arg
50 55 60
Ile Leu Ser Ala Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
65 70 75 80
Ser Leu Arg Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Thr
85 90 95
Asp Leu Leu Val His Leu Lys Arg Leu Phe Arg Gln Gly Thr Phe Asn
100 105 110

<210> 11

<211> 121

<212> PRT

<213> Artificial Sequence

<220>

<223> Human Immunogen

<400> 11

Gly Pro Val Pro Pro Ser Thr Ala Leu Arg Glu Leu Ile Glu Glu Leu
1 5 10 15 ..
Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
20 25 30
Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Glu
35 40 45
Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Lys Thr Gln Arg
50 55 60 ..
Met Leu Gly Gly Phe Cys Pro His Lys Phe Asn Asn Phe Thr Val Ser
65 70 75 80

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Phe	Trp	Leu	Arg	Val	Pro	Lys	Val	Ser	Ala	Ser	His	Leu	Glu	Asp	Thr
				85					90				95		
Lys	Ile	Glu	Val	Ala	Gln	Phe	Val	Lys	Asp	Leu	Leu	Leu	His	Leu	Lys
				100			105			110					
Lys	Leu	Phe	Arg	Glu	Gly	Arg	Phe	Asn							
				115			120								

<210> 12

<211> 133

<212> PRT

<213> Artificial Sequence

<220>

<223> Human Immunogen

<400> 12

Phe	Asn	Asn	Phe	Thr	Val	Ser	Phe	Trp	Leu	Arg	Val	Pro	Lys	Val	Ser
1					5				10				15		
Ala	Ser	His	Leu	Glu	Gly	Pro	Val	Pro	Pro	Ser	Thr	Ala	Leu	Arg	Glu
							20		25			30			
Leu	Ile	Glu	Glu	Leu	Val	Asn	Ile	Thr	Gln	Asn	Gln	Lys	Ala	Pro	Leu
						35		40		45					
Cys	Asn	Gly	Ser	Met	Val	Trp	Ser	Ile	Asn	Leu	Thr	Ala	Gly	Met	Tyr
						50		55		60					
Cys	Ala	Ala	Leu	Glu	Ser	Leu	Ile	Asn	Val	Ser	Gly	Cys	Ser	Ala	Ile
						65		70		75		80			
Glu	Lys	Thr	Gln	Arg	Met	Leu	Gly	Gly	Phe	Cys	Pro	His	Lys	Val	Ser
						85			90		95				
Ala	Gly	Gln	Phe	Ser	Ser	Leu	His	Val	Arg	Asp	Thr	Lys	Ile	Glu	Val
						100			105		110				
Ala	Gln	Phe	Val	Lys	Asp	Leu	Leu	His	Leu	Lys	Lys	Leu	Phe	Arg	
						115			120		125				
Glu	Gly	Arg	Phe	Asn											
				130											

<210> 13

<211> 123

<212> PRT

<213> Artificial Sequence

<220>

<223> Human Immunogen

<400> 13

Gly	Pro	Val	Pro	Arg	Ser	Val	Ser	Leu	Pro	Leu	Thr	Leu	Lys	Glu	Leu
1					5				10				15		
Ile	Glu	Glu	Leu	Ser	Asn	Ile	Thr	Gln	Asp	Gln	Thr	Pro	Leu	Cys	Asn
						20		25		30					
Gly	Ser	Met	Val	Trp	Ser	Val	Asp	Leu	Ala	Ala	Gly	Gly	Phe	Cys	Val
						35		40		45					

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Ala	Leu	Asp	Ser	Leu	Thr	Asn	Ile	Ser	Asn	Cys	Asn	Ala	Ile	Tyr	Arg
50						55						60			
Thr	Gln	Arg	Ile	Leu	His	Gly	Leu	Cys	Asn	Arg	Lys	Phe	Asn	Asn	Phe
65						70					75				80
Thr	Val	Ser	Phe	Trp	Leu	Arg	Val	Pro	Lys	Val	Ser	Ala	Ser	His	Leu
										85	90			95	
Glu	Asp	Thr	Lys	Ile	Glu	Val	Ala	His	Phe	Ile	Thr	Lys	Leu	Leu	Ser
										100	105			110	
Tyr	Thr	Lys	Gln	Leu	Phe	Arg	His	Gly	Pro	Phe					
										115	120				

<210> 14

<211> 132

<212> PRT

<213> Artificial Sequence

<220>

<223> Human Immunogen

<400> 14

Phe	Asn	Asn	Phe	Thr	Val	Ser	Phe	Trp	Leu	Arg	Val	Pro	Lys	Val	Ser
1						5				10				15	
Ala	Ser	His	Leu	Glu	Gly	Pro	Val	Pro	Arg	Ser	Val	Ser	Leu	Pro	Leu
										20	25			30	
Thr	Leu	Lys	Glu	Leu	Ile	Glu	Glu	Leu	Ser	Asn	Ile	Thr	Gln	Asp	Gln
							35	40				45			
Thr	Pro	Leu	Cys	Asn	Gly	Ser	Met	Val	Trp	Ser	Val	Asp	Leu	Ala	Ala
							50	55			60				
Gly	Gly	Phe	Cys	Val	Ala	Leu	Asp	Ser	Leu	Thr	Asn	Ile	Ser	Asn	Cys
65						70			75			80			
Asn	Ala	Ile	Tyr	Arg	Thr	Gln	Arg	Ile	Leu	His	Gly	Leu	Cys	Asn	Arg
							85			90			95		
Lys	Ala	Pro	Thr	Thr	Val	Ser	Ser	Leu	Pro	Asp	Thr	Lys	Ile	Glu	Val
							100		105			110			
Ala	His	Phe	Ile	Thr	Lys	Leu	Leu	Ser	Tyr	Thr	Lys	Gln	Leu	Phe	Arg
							115		120			125			
His	Gly	Pro	Phe												
							130								

<210> 15

<211> 132

<212> PRT

<213> Artificial Sequence

<220>

<223> Human Immunogen

<400> 15

Phe	Asn	Asn	Phe	Thr	Val	Ser	Phe	Trp	Leu	Arg	Val	Pro	Lys	Val	Ser
1						5				10				15	

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Ala Ser His Leu Glu Gly Pro Val Pro Arg Ser Val Ser Leu Pro Val
 20 25 30
 Thr Leu Lys Glu Leu Ile Glu Glu Leu Thr Asn Ile Thr Gln Asp Gln
 35 40 45
 Thr Pro Leu Cys Asn Gly Ser Met Val Trp Ser Val Asp Leu Ala Ala
 50 55 60
 Gly Gly Phe Cys Val Ala Leu Asp Ser Leu Thr Asn Ile Ser Asn Cys
 65 70 75 80
 Asn Ala Ile Phe Arg Thr Gln Arg Ile Leu His Ala Leu Cys Asn Arg
 85 90 95
 Lys Ala Pro Thr Thr Val Ser Ser Leu Pro Asp Thr Lys Ile Glu Val
 100 105 110
 Ala His Phe Ile Thr Lys Leu Leu Thr Tyr Thr Lys Asn Leu Phe Arg
 115 120 125
 Arg Gly Pro Phe
 130

<210> 16

<211> 249

<212> PRT

<213> Artificial Sequence

<220>

<223> Human Immunogen

<400> 16

Tyr Val His Ser Asp Gly Ser Tyr Pro Lys Asp Lys Phe Glu Lys Ile
 1 5 10 15
 Asn Gly Thr Trp Tyr Tyr Phe Asp Ser Ser Gly Tyr Met Leu Ala Asp
 20 25 30
 Arg Trp Arg Lys His Thr Asp Gly Asn Trp Tyr Trp Phe Asp Asn Ser
 35 40 45
 Gly Glu Met Ala Thr Gly Trp Lys Lys Ile Ala Asp Lys Trp Tyr Tyr
 50 55 60
 Phe Asn Glu Glu Gly Ala Met Lys Thr Gly Trp Val Lys Tyr Lys Asp
 65 70 75 80
 Thr Trp Tyr Tyr Leu Asp Ala Lys Glu Gly Ala Met Gln Tyr Ile Lys
 85 90 95
 Ala Asn Ser Lys Phe Ile Gly Ile Thr Glu Gly Val Met Val Ser Asn
 100 105 110
 Ala Phe Ile Gln Ser Ala Asp Gly Thr Gly Trp Tyr Tyr Leu Lys Pro
 115 120 125
 Asp Gly Thr Leu Ala Asp Arg Pro Glu Gly Pro Val Pro Pro Ser Ser
 130 135 140
 Ala Leu Lys Glu Leu Ile Glu Glu Leu Ala Asn Ile Thr Gln Asn Gln
 145 150 155 160
 Lys Ala Pro Leu Cys Asn Gly Ser Met Val Trp Ser Ile Asn Leu Thr
 165 170 175
 Ala Gly Met Tyr Cys Ala Ala Leu Asp Ser Leu Ile Asn Val Ser Gly
 180 185 190
 Cys Ser Ala Ile Glu Arg Thr Gln Arg Ile Leu Ser Ala Phe Cys Pro

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195	200	205
His Lys Val Ser Ala Gly Gln Phe Ser Ser Leu Arg Val Arg Asp Thr		
210	215	220
Lys Ile Glu Val Ala Gln Phe Val Thr Asp Leu Leu Val His Leu Lys		
225	230	235
Arg Leu Phe Arg Gln Gly Thr Phe Asn		
245		

<210> 17

<211> 220

<212> PRT

<213> Artificial Sequence

<220>

<223> Human Immunogen

<400> 17

Ser Ser His Ser Ser Asn Met Ala Asn Thr Gln Met Lys Ser Asp Lys		
1	5	10
Ile Ile Ile Ala His Arg Gly Ala Ser Gly Tyr Leu Pro Glu His Thr		
20	25	30
Leu Glu Ser Lys Ala Leu Ala Phe Ala Gln Gln Ala Asp Tyr Leu Glu		
35	40	45
Gln Asp Leu Ala Met Thr Lys Asp Gly Arg Leu Val Val Ile His Asp		
50	55	60
His Phe Leu Asp Gly Leu Thr Asp Val Ala Lys Lys Phe Pro His Arg		
65	70	75
His Arg Lys Asp Gly Arg Tyr Tyr Val Ile Asp Phe Thr Leu Lys Glu		
85	90	95
Ile Gln Ser Leu Glu Met Thr Glu Asn Phe Glu Thr Gly Pro Val Pro		
100	105	110
Pro Ser Ser Ala Leu Lys Glu Leu Ile Glu Glu Leu Ala Asn Ile Thr		
115	120	125
Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met Val Trp Ser Ile		
130	135	140
Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Asp Ser Leu Ile Asn		
145	150	155
Val Ser Gly Cys Ser Ala Ile Glu Arg Thr Gln Arg Ile Leu Ser Ala		
165	170	175
Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser Ser Leu Arg Val		
180	185	190
Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Thr Asp Leu Leu Val		
195	200	205
His Leu Lys Arg Leu Phe Arg Gln Gly Thr Phe Asn		
210	215	220

<210> 18

<211> 133

<212> PRT

<213> Artificial Sequence

corrected PG4939A sequence listing.txt

<220>

<223> Human Immunogen

<400> 18

Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro Lys Val Ser
1 5 10 15
Ala Ser His Leu Glu Gly Pro Val Pro Pro Ser Ser Ala Leu Lys Glu
20 25 30
Leu Ile Glu Glu Leu Ala Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu
35 40 45
Cys Asn Gly Ser Met Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr
50 55 60
Cys Ala Ala Leu Asp Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile
65 70 75 80
Glu Arg Thr Gln Arg Ile Leu Ser Ala Phe Cys Pro His Lys Val Ser
85 90 95
Ala Gly Gln Phe Ser Ser Leu Arg Val Arg Asp Thr Lys Ile Glu Val
100 105 110
Ala Gln Phe Val Thr Asp Leu Leu Val His Leu Lys Arg Leu Phe Arg
115 120 125
Gln Gly Thr Phe Asn
130

<210> 19

<211> 133

<212> PRT

<213> Artificial Sequence

<220>

<223> Human Immunogen

<400> 19

Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro Lys Val Ser
1 5 10 15
Ala Ser His Leu Glu Gly Pro Val Pro Pro Ser Ser Ala Leu Lys Ile
20 25 30
Leu Ile Glu Glu Leu Ala Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu
35 40 45
Cys Asn Gly Ser Met Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr
50 55 60
Cys Ala Ala Leu Asp Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile
65 70 75 80
Glu Arg Thr Gln Arg Ile Leu Ser Ala Phe Cys Pro His Lys Val Ser
85 90 95
Ala Gly Gln Phe Ser Ser Leu Arg Val Arg Asp Thr Lys Ile Glu Val
100 105 110
Ala Gln Phe Val Thr Asp Leu Leu Val His Leu Lys Arg Leu Phe Arg
115 120 125
Gln Gly Thr Phe Asn
130

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<210> 20
<211> 112
<212> PRT
<213> Artificial Sequence

<220>
<223> Human Immunogen

<400> 20
Gly Pro Val Pro Pro Ser Ser Ala Leu Lys Glu Leu Ile Glu Glu Leu
1 5 10 15
Ala Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
20 25 30
Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Asp
35 40 45
Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Arg Thr Gln Arg
50 55 60
Ile Leu Ser Ala Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
65 70 75 80
Ser Leu His Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Thr
85 90 95
Asp Leu Leu Val His Leu Lys Arg Leu Phe Arg Gln Gly Arg Phe Asn
100 105 110

<210> 21
<211> 112
<212> PRT
<213> Artificial Sequence

<220>
<223> Human Immunogen

<400> 21
Gly Pro Val Pro Pro Ser Thr Ala Leu Lys Glu Leu Ile Glu Glu Leu
1 5 10 15
Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
20 25 30
Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Asp
35 40 45
Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Arg Thr Gln Arg
50 55 60
Ile Leu Ser Ala Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
65 70 75 80
Ser Leu Arg Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Thr
85 90 95
Asp Leu Leu Val His Leu Lys Lys Leu Phe Arg Gln Gly Thr Phe Asn
100 105 110

corrected PG4939A sequence listing.txt

<210> 22
<211> 112
<212> PRT
<213> Artificial Sequence

<220>
<223> Human Immunogen

<400> 22
Gly Pro Val Pro Pro Ser Ser Ala Leu Arg Glu Leu Ile Glu Glu Leu
1 5 10 15
Ala Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
20 25 30
Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Glu
35 40 45
Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Asp Lys Thr Gln Arg
50 55 60
Met Leu Ser Ala Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
65 70 75 80
Ser Leu His Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Lys
85 90 95
Asp Leu Leu Val His Leu Lys Arg Leu Phe Arg Asp Gly Arg Phe Asn
100 105 110

<210> 23
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<223> Human Immunogen

<400> 23
Gly Pro Val Pro Arg Ser Val Ser Leu Pro Leu Thr Leu Arg Glu Leu
1 5 10 15
Ile Glu Glu Leu Val Asn Ile Thr Gln Asp Gln Thr Pro Leu Cys Asn
20 25 30
Gly Ser Met Val Trp Ser Val Asp Leu Ala Ala Gly Gly Tyr Cys Ala
35 40 45
Ala Leu Glu Ser Leu Thr Asn Ile Ser Asn Cys Asn Ala Ile Glu Lys
50 55 60
Thr Gln Arg Met Leu Gly Gly Leu Cys Asn Arg Lys Ala Pro Thr Thr
65 70 75 80
Val Ser Ser Leu Pro Asp Thr Lys Ile Glu Val Ala Gln Phe Val Lys
85 90 95
Asp Leu Leu Ser Tyr Thr Lys Gln Leu Phe Arg His Gly Pro Phe
100 105 110

<210> 24
<211> 16

corrected PG4939A sequence listing.txt

<212> PRT

<213> Homo Sapiens

<400> 24

Pro Ser Thr Ala Leu Arg Glu Leu Ile Glu Glu Leu Val Asn Ile Thr
1 5 10 15

<210> 25

<211> 10

<212> PRT

<213> Homo Sapiens

<400> 25

Met Tyr Cys Ala Ala Leu Glu Ser Leu Ile
1 5 10

<210> 26

<211> 9

<212> PRT

<213> Homo sapiens

<400> 26

Lys Thr Gln Arg Met Leu Ser Gly Phe
1 5

<210> 27

<211> 17

<212> PRT

<213> Homo sapiens

<400> 27

Ala Gln Phe Val Lys Asp Leu Leu Leu His Leu Lys Lys Leu Phe Arg
1 5 10 15
Glu

<210> 28

<211> 8

<212> PRT

<213> Homo sapiens

<400> 28

Gly Pro Val Pro Pro Ser Thr Ala
1 5

<210> 29

<211> 24

corrected PG4939A sequence listing.txt

<212> PRT

<213> Homo sapiens

<400> 29

Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met Val Trp
1 5 10 15
Ser Ile Asn Leu Thr Ala Gly Met
20

<210> 30

<211> 7

<212> PRT

<213> Homo sapiens

<400> 30

Ile Asn Val Ser Gly Cys Ser
1 5

<210> 31

<211> 19

<212> PRT

<213> Homo sapiens

<400> 31

Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser Ser Leu His Val
1 5 10 15
Arg Asp Thr

<210> 32

<211> 13

<212> PRT

<213> Homo sapiens

<400> 32

Leu His Leu Lys Lys Leu Phe Arg Glu Gly Arg Phe Asn
1 5 10

<210> 33

<211> 14

<212> PRT

<213> unknown

<220>

<223> Tetanus toxin peptide

<400> 33

Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly Ile Thr Glu

corrected PG4939A sequence listing.txt

1 5 10

<210> 34
<211> 21
<212> PRT
<213> unknown

<220>
<223> Tetanus toxin peptide

<400> 34
Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro Lys Val Ser
1 5 10 15
Ala Ser His Leu Glu
20

<210> 35
<211> 21
<212> PRT
<213> Plasmodium falciparum

<400> 35
Asp Ile Glu Lys Lys Ile Ala Lys Met Glu Lys Ala Ser Ser Val Phe
1 5 10 15
Asn Val Val Asn Ser
20

<210> 36
<211> 15
<212> PRT
<213> Measles virus

<400> 36
Leu Ser Glu Ile Lys Gly Val Ile Val His Arg Leu Glu Gly Val
1 5 10 15

<210> 37
<211> 15
<212> PRT
<213> Hepatitis B virus

<400> 37
Phe Phe Leu Leu Thr Arg Ile Leu Thr Ile Pro Gln Ser Leu Asp
1 5 10 15

<210> 38
<211> 19

corrected PG4939A sequence listing.txt

<212> PRT

<213> Corynebacterium diphtheriae

<400> 38

Pro Val Phe Ala Gly Ala Asn Tyr Ala Ala Trp Ala Val Asn Val Ala
1 5 10 15

Gln Val Ile

<210> 39

<211> 20

<212> PRT

<213> Corynebacterium diphtheriae

<400> 39

Val His His Asn Thr Glu Glu Ile Val Ala Gln Ser Ile Ala Leu Ser
1 5 10 15

Ser Leu Met Val

20

<210> 40

<211> 20

<212> PRT

<213> Corynebacterium diphtheriae

<400> 40

Gln Ser Ile Ala Leu Ser Ser Leu Met Val Ala Gln Ala Ile Pro Leu
1 5 10 15

Val Gly Glu Leu

20

<210> 41

<211> 20

<212> PRT

<213> Corynebacterium diphtheriae

<400> 41

Val Asp Ile Gly Phe Ala Ala Tyr Asn Phe Val Glu Ser Ile Ile Asn
1 5 10 15

Leu Phe Gln Val

20

<210> 42

<211> 20

<212> PRT

<213> Corynebacterium diphtheriae

<400> 42

corrected PG4939A sequence listing.txt

Gln Gly Glu Ser Gly His Asp Ile Lys Ile Thr Ala Glu Asn Thr Pro
1 5 10 15
Leu Pro Ile Ala
20

<210> 43
<211> 20
<212> PRT
<213> Corynebacterium diphtheriae

<400> 43
Gly Val Leu Leu Pro Thr Ile Pro Gly Lys Leu Asp Val: Asn Lys Ser
1 5 10 15
Lys Thr His Ile
20

<210> 44
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial immunostimulatory oligonucleotide

<400> 44
tccatgacgt tcctgacgtt
20

<210> 45
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial immunostimulatory oligonucleotide

<400> 45
tctcccgacg tgccat
18

<210> 46
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial immunostimulatory oligonucleotide

<400> 46
accgatgacg tcgccccgtga cggcaccacg

corrected PG4939A sequence listing.txt

30

<210> 47
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial immunostimulatory oligonucleotide

<400> 47
tcgtcgttt gtcgtttgt cgtt
24

<210> 48
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial immunostimulatory oligonucleotide

<400> 48
tccatgacgt tcctgatgct
20

<210> 49
<211> 72
<212> DNA
<213> homo sapiens

<400> 49
tgtgatgttg accagctcct caatgagctc cctaagggtc agagggagag acacagatct
60
tggcacccggc cc
72

<210> 50
<211> 73
<212> DNA
<213> homo sapiens

<400> 50
aggagctggt caacatcaca caagaccaga ctcccctgtg caacggcagc atggtatgga
60
gtgtggacct ggc
73

<210> 51
<211> 72
<212> DNA
<213> homo sapiens

corrected PG4939A sequence listing.txt

<400> 51
gcaattggag atgttggtca gggattccag ggctgcacag tacccgccag cggccaggtc
60
cacactccat ac
72

<210> 52
<211> 73
<212> DNA
<213> homo sapiens

<400> 52
tgaccaacat ctccaattgc aatgccatcg agaagaccca gaggatgctg ggccggactct
60
gtaaccgcaa ggc
73

<210> 53
<211> 72
<212> DNA
<213> homo sapiens

<400> 53
aaactgggcc acctcgattt tggtatcggg gaggctggag accgtagtgg gggccttgcg
60
gttacagagt cc
72

<210> 54
<211> 71
<212> DNA
<213> homo sapiens

<400> 54
aaatcgaggt ggcccagttt gtaaaggacc tgctcagcta cacaaagcaa ctgtttcgcc
60
acggccccctt c
71

<210> 55
<211> 28
<212> DNA
<213> homo sapiens

<400> 55
cgcggattcg ggccggtgcc aagatctg
28

<210> 56
<211> 37
<212> DNA

corrected PG4939A sequence listing.txt

<213> homo sapiens

<400> 56

ctccgctcga gtcgacttag aaggggccgt ggcgaaa

37

<210> 57

<211> 28

<212> DNA

<213> homo sapiens

<400> 57

cgcggatccg ggccggtgcc aagatctg

28

<210> 58

<211> 6

<212> PRT

<213> homo sapiens

<400> 58

Glu Leu Ile Glu Glu Leu

1

5

<210> 59

<211> 4

<212> PRT

<213> homo sapiens

<400> 59

Asn Ile Thr Gln

1

<210> 60

<211> 5

<212> PRT

<213> homo sapiens

<400> 60

Ser Met Val Trp Ser

1

5

<210> 61

<211> 7

<212> PRT

<213> homo sapiens

<400> 61

Asp Thr Lys Ile Glu Val Ala

corrected PG4939A sequence listing.txt

1 5

<210> 62
<211> 336
<212> DNA
<213> Artificial Sequence

<220>
<223> Human Immunogen

<400> 62
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cagaaccaga aggctccgct ctgcaatggc agcatggtat ggagcatcaa cctgacagct
120
ggcatgtact gtgcagccct ggactccctg atcaacgtgt caggctgcag tgccatcgag
180
cggaccaga ggatcttgag cgcccttctgc ccgcacaagg tctcagctgg gcagtttcc
240
agcttgcgtg tccgagacac caaaatcgag gtggccagt ttgtAACGGA cctgctcgta
300
catttaaaga gacttttcg ccagggAACG ttcaac
336

<210> 63
<211> 336
<212> DNA
<213> Artificial Sequence

<220>
<223> Human Immunogen

<400> 63
ccgggacacg gagggagatc gcgggagttc ctcgagtaac tcctcgaccg gttgtagtgg
60
gtcttggtct tccgaggcga gacgttaccg tcgtaccata cctcgtagtt ggactgtcga
120
ccgtacatga cacgtcggga cctgagggac tagttgcaca gtccgacgtc acggtagctc
180
gcctgggtct cctagaactc gcggaagacg ggcgtgttcc agagtcgacc cgtcaaaagg
240
tcgaacgcac aggctctgtg gtttagctc caccgggtca aacattgcct ggacgagcat
300
gtaaatttct ctgaaaaagc ggtcccttgc aagttg
336

<210> 64
<211> 747
<212> DNA
<213> Artificial Sequence

corrected PG4939A sequence listing.txt

<220>

<223> Human Immunogen

<400> 64

tacgtacatt ccgacggctc ttatccaaaa gacaagttt agaaaatcaa tggcacttgg
60 tactactttg acagttcagg ctatatgctt gcagaccgct ggaggaagca cacagacggc
120 aactggtaact ggttcgacaa ctcaggcgaa atggctacag gctggaagaa aatcgctgat
180 aagtggtaact atttcaacga agaaggtgcc atgaagacag gctgggtcaa gtacaaggac
240 acttggtaact acttagacgc taaagaaggc gccatgcaat acatcaaggc taactctaag
300 ttcattggta tcactgaagg cgtcatggta tcaaattgcct ttatccagtc agcggacgga
360 acaggctggt actacacctaa accagacgga acactggcag acaggccaga aggcctgtg
420 cctccctcta gcgcctcaa ggagctcatt gaggagctgg ccaacatcac ccagaaccag
480 aaggctccgc tctgcaatgg cagcatggta tggagcatca acctgacagc tggcatgtac
540 tttgcagccc tggactccct gatcaacgtg tcaggctgca gtgccatcga gcggacccag
600 aggatcttga gcgccttctg cccgcacaag gtctcagctg ggcagtttc cagttgcgt
660 gtccgagaca ccaaaatcga ggtggccag tttgtAACGG acctgctcgt acatttaaag
720 agacttttc gccaggaaac gttcaac
747

<210> 65

<211> 660

<212> DNA

<213> Artificial Sequence

<220>

<223> Human Immunogen

<400> 65

tcctctcatt cttctaacat ggcgaacacc cagatgaagt ccgataaaat catcatcgcg
60 cacagggag ctagcgggta tctgcctgag cacaccctgg agtccaaggc tctggcggtc
120 gcccagcagg ctgactacct ggagcaggac ctggcgatga caaaggatgg ccgcctcgtg
180 gtgatccatg accattttct cgacggactg accgacgtcg ccaagaagtt ccccccaccgc
240 cataggaagg acgggaggtt ttacgtgatt gacttcaccc tcaaggagat ccagagcctg
300 gagatgaccg agaacttcga gaccggccct gtgcctccct ctagcgcct caaggagctc
360

corrected PG4939A sequence listing.txt

attgaggagc tggccaaat cacccagaac cagaaggctc cgctctgcaa tggcagcatg
420
gtatggagca tcaacctgac agctggcatg tactgtgcag ccctggactc cctgatcaac
480
gtgtcaggct gcagtgccat cgagcggacc cagaggatct tgagcgccctt ctgcccgcac
540
aaggctctag ctgggcagtt ttccagcttgcgtgtccgag acacaaaaat cgaggtggcc
600
cagtttgtaa cggacctgct cgtacattta aagagacttt ttcgccaggg aacgttcaac
660

<210> 66
<211> 399
<212> DNA
<213> Artificial Sequence

<220>
<223> Human Immunogen

<400> 66
tttaataatt ttaccgttag cttttggttg cgtgttccta aagtatctgc tagtcattta
60
gaaggccctg tgcctccctc tagcgccctc aaggagctca ttgaggagct ggccaacatc
120
acccagaacc agaaggctcc gctctgcaat ggcagcatgg tatggagcat caacctgaca
180
gctggcatgt actgtgcagc cctggactcc ctgatcaacg tgtcaggctg cagtgccatc
240
gagcggaccc agaggatctt gagcgccttc tgcccgaca aggtctcagc tggcagttt
300
tccagcttgc gtgtccgaga cacaaaaatc gaggtggccc agtttgtaac ggacctgctc
360
gtacatttaa agagactttt tcgcccaggga acgttcaac
399

<210> 67
<211> 399
<212> DNA
<213> Artificial Sequence

<220>
<223> Human Immunogen

<400> 67
tttaataatt ttaccgttag cttttggttg cgtgttccta aagtatctgc tagtcattta
60
gaaggccctg tgcctccctc tagcgccctc aagattctca ttgaggagct ggccaacatc
120
acccagaacc agaaggctcc gctctgcaat ggcagcatgg tatggagcat caacctgaca
180
gctggcatgt actgtgcagc cctggactcc ctgatcaacg tgtcaggctg cagtgccatc

corrected PG4939A sequence listing.txt

240 gagcggaccc agaggatctt gagcgcccttc tgcccgacca aggtctcagc tgggcagtt
300 tccagcttgc gtgtccgaga caccaaaaatc gaggtggccc agtttctaac ggacctgctc
360 gtacattaa agagacttt tcgcccaggga acgttcaac
399

<210> 68
<211> 336
<212> DNA
<213> Artificial Sequence

<220>
<223> Human Immunogen

<400> 68
ggccgggtgc caagatctgt gtctctccct ctgaccctta gggagctcat tgaggagctg
60
gtcaacatca cacaagacca gactcccctg tgcaacggca gcatggtatg gagtggtggac
120
ctggccgctg gcgggtactg tgcagccctg gaatccctga ccaacatctc caattcaat
180
gccatcgaga agacccagag gatgctgggc ggactctgta accgcaaggc ccccaactacg
240
gtctccagcc tccccgatac caaaatcgag gtggccagt ttgtaaagga cctgctcagc
300
tacacaaagc aactgtttcg ccacggcccc ttctaa
336

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